

**REMARKS**

Claims 1-20 are pending in this application. By this Amendment, claims 1, 7 and 15 are amended. Support for the amendments to the claims may be found, for example, in the original claims and in the specification at page 7, lines 9-11. No new matter is added.

In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

**I. Rejections Under 35 U.S.C. §103**

**A. Joachimi, Aylward and Andrew**

The Office Action rejects claims 1-23, 25 and 26 under 35 U.S.C. §103(a) over U.S. Patent Application Publication No. 2003/0125429 to Joachimi et al. (hereinafter "Joachimi") in view of U.S. Patent No. 5,998,119 to Aylward et al. (hereinafter "Aylward") in further view of U.S. Patent No. 3,459,575 to Andrew et al. (hereinafter "Andrew").

Applicants respectfully traverse the rejection.

Independent claims 1, 7 and 15 are amended to even more clearly distinguish over the applied references. Specifically, independent 1, 7 and 15 are amended to recite that the laser transmissible resin composition or workpiece "exhibits a hue of white." The applied references disclose no such features and one of ordinary skill in the art would have had no reason or rationale to combine the teachings of the applied references to obtain the laser transmissible resin composition or workpiece of claims 1, 7, and 15.

For example, Joachimi discloses dark-colored thermal plastic molding compositions and mold parts produced therefrom. See Joachimi, col. 1, lines 3-4. Additionally, as acknowledged by the Office Action, Joachimi is drawn primary to darker work pieces and states that the primary problem with whitish work pieces is they tend to yellow and become aesthetically unpleasing. See Office Action, page 12. Aylward discloses imaging papers where the polymeric resin layer is laminated onto the paper. See Aylward, col. 1, lines 6-8.

Andrew discloses a titanium pigment manufacture in which the pigment is used for coating compounds such as paints, enamels and lacquers and finishes. Thus, Aylward and Andrew are not directed to laser-transmissible resin composition and a method for laser welding. Accordingly, Applicants respectfully submit that one of ordinary skill in the art would have had no reason or rationale to combine the teachings of Joachimi with Aylward and Andrew to obtain the laser transmissible resin of claims 1, 7 and 15 because Joachimi is directed towards dark work pieces, and teaches away from whitish work pieces, and Aylward and Andrew fail to teach or suggest that their respective teachings may even be applied to laser-transmissible resin compositions and methods for laser welding.

Furthermore, Aylward appears to teach the use of titanium dioxide in photoimaging paper with the pigment diameter in the range of 0.1 to 0.26  $\mu\text{m}$ . See Aylward, col. 6, lines 25-37. The imaging paper cannot be welded by a laser.

Additionally, claims 1, 7, and 15, recite having "100 parts by weight of a thermal plastic resin" and "0.01 to 3 parts by weight of titanium oxide," which is substantially lower than 10%. Aylward discloses a titanium dioxide composition in a range of about 10 to about 50% by weight titanium oxide and, thus teaches away from the titanium dioxide composition below 10%. See Aylward, col. 6, lines 37-41, reproduced below for convenience.

Preferably, the white pigment should be employed in the range of from about numeral 10 to about numeral 50% by weight, based on the total weight of the polyolefin coating. Below numeral 10%  $\text{TiO}_2$ , the imaging system will not be sufficiently opaque and will have inferior optical properties.

If the amount of pigment suggested by Aylward is used for laser-welding, it would have a detrimental effect on the laser-welding. The increased amount of titanium oxide would result in increased absorption or reflective diffusion of the laser beam by titanium oxide when laser welding occurs and also the laser beam would not sufficiently transmit. See specification, page 4, lines 14-18. Thus, one of ordinary skill in the art looking to produce a

resin composition that is *laser-transmissible* would have had no reason or rationale to combine the teachings of the applied references with any reasonable expectation of success of producing the laser transmissible resin of claims 1, 7, and 15.

Finally, Andrew discloses titanium pigment that is used for coating compounds such as paints, enamels and lacquers, and finishes. Although Andrew discloses titanium dioxide pigments that are surface coated with small amounts of white hydrous metal oxide, it fails to teach or suggest that the surface-treated titanium dioxide can be used for laser-welding. Furthermore, it does not mention that surface-treated titanium dioxide provides the benefit of better laser-transmissivity because the whitish surface-treated coating layer reflects radiant ray. As such, benefits relating to laser-transmissible properties are not taught by Andrew or the other applied references and one of ordinary skill in the art looking to produce a laser-transmissible resin would have had no reason or rationale to combine the teachings of the applied references with any reasonable expectation of success of producing the laser transmissible resin of claims 1, 7, and 15.

For at least the foregoing reasons, Joachimi, Aylward and Andrew, considered either separately or in combination, would not have rendered obvious independent claims 1, 7 and 15. Claims 2-6, 8-14, 16-23, 25 and 26 variously depend from claims 1, 7 and 15 and, thus, also would not have been rendered obvious by Joachimi, Aylward and Andrew. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**B. Joachimi, Aylward, Andrew and Savitski**

The Office Action rejects claims 24, 27 and 28 under 35 U.S.C. §103(a) over Joachimi, Aylward and Andrew, as applied to claim 23 above, further in view of U.S. Patent No. 6,596,122 to Savitski et al. (hereinafter "Savitski"). Applicants respectfully traverse the rejection.

For at least the foregoing reasons, Joachimi, Aylward and Andrew, considered either separately or in combination, would not have rendered obvious the subject matter of independent claim 15. Savitski fails to disclose that titanium oxide particles are treated with a surface treatment agent selected from the group consisting of aluminum, alumina, aluminum-silicon, aluminum laurate and aluminum stearate. Thus, despite its asserted teachings, Savitski does not cure the deficiencies of Joachimi, Aylward and Andrew with respect to claim 15. Therefore, Joachimi, Aylward, Andrew and Savitski, considered either separately or in combination, would not have rendered obvious claim 15.

Claim 15 would not have been rendered obvious by Joachimi, Aylward, and Savitski. Claims 24, 27 and 28 variously depend from claim 15 and, thus, also would not have been rendered obvious by Joachimi, Aylward, Andrew and Savitski. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

## **II. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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